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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PEIGUANG ZHOU

Appeal 2008-1542
Application 10/655,717
Technology Center 1700

Decided: June 12, 2008

Before EDWARD C. KIMLIN, THOMAS A. WALTZ, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant seeks review under 35 U.S.C. § 134 from the Examiner's rejections of claims 18-22, 24-35, 44-48, and 52-65, in the final Office Action, dated June 13, 2006. This Board has jurisdiction under 35 U.S.C. § 6(b).

The invention is directed to a composition for an adhesive composition having high stretchability and sufficient bond strength. The stretchable adhesive composition includes an atactic polymer, an isotactic polymer and an elastomeric base polymer (App. Br. 2).¹ Independent claim 18 is illustrative and is reproduced below:

18. A laminated structure, comprising:

first and second facing layers; and

a stretchable adhesive composition between at least a portion of each of the first and second facing layers, the stretchable adhesive composition including about 30-90% by weight of an atactic polymer having a degree of crystallinity of about 20% or less, about 5-30% by weight of an isotactic polymer having a degree of crystallinity of about 40% or greater, and about 2-20% by weight of an elastomeric base polymer;

wherein the laminated structure has a 180° static peel strength (time to fail) of at least about six hours and a dynamic peel strength after 85% stretch of at least about 2000 grams per 2-inch width.

The Examiner relies on the following prior art references in making the rejections presented for review in this appeal:

Lakshmanan	4,857,594	Aug. 15, 1989
Zhou	WO 02/053668	July 11, 2002

All pending claims stand rejected, as follows:

Claims 18-22, 24-35, 44-48, and 52-65 stand rejected under 35 U.S.C. § 103(a) as obvious over Zhou in view of Lakshmanan (Ans. 3).

¹ We refer to and cite from the amended Appeal Brief dated Feb. 20, 2007.

Appellant does not argue the rejected claims separately, but only as a group. Therefore, the claims stand or fall together. 37 C.F.R. § 41.37(c)(1)(vii). The Board selects independent claim 18 as exemplary.

The Appellant contends that the Examiner erred in finding the claims obvious. Specifically, the Appellant contends that there was no teaching, suggestion or motivation to substitute the composition in Lakshmann for the atactic polyolefin component of the adhesive composition in Zhou (App. Br. 4). The Examiner contends that while Zhou does not teach an elastomeric base polymer, Lakshmanan motivates a skilled artisan to add a selectively hydrogenated block copolymer to an amorphous polyolefin adhesive to improve its adhesion to polyolefin substrates (Ans. 4). Further, the claimed peel strength is understood to be a “latent” property (*id.*).

ISSUE

Has Appellant established that the Examiner reversibly erred in rejecting the claims as obvious over Zhou in view of Lakshmanan?

PRINCIPLES OF LAW

Section 103 forbids issuance of a patent when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level

of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *KSR*, 127 S.Ct. at 1740. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. *Id* at 1739.

FINDINGS OF FACT (FF)

We determine the following Factual Findings (FF) from the record presented in this appeal:

1. The present invention of a laminate structure comprises two facing layers, adhered together by an adhesive composition, the composition comprising an atactic polymer, an isotactic polymer and an elastic base polymer. The composition may also include other additives, such as a tackifier resin, antioxidantizing agent, plasticizer, mineral oil, pigment, filler, polymer compatibilizer, and combinations thereof (Abstract).

2. The elastic base polymer of the present invention includes elastic block copolymers such as styrene-isoprene-styrene (“SIS”) and styrene-butadiene-styrene (“SBS”) (Spec. 12).

3. Other embodiments of Zhou include adhesive compositions comprising other additives, including tackifiers (Zhou, p. 23, ll. 8-12).

4. Lakshmanan discloses an adhesive composition comprising an amorphous polyalphaolefin, a tackifier, and a selectively hydrogenated monoalkenyl arene/conjugated diene block copolymer (“block copolymer elastomer”). The block copolymer elastomer may include species such as SBS and SIS. (Lakshmanan, col. 1, ll. 14-18).

5. Lakshmanan teaches that the addition of the block copolymer elastomer to the amorphous polyolefin, together with a tackifier, provides an unexpected improvement in adhesion to polyolefin substrates, as compared to conventional hot melt adhesives based on amorphous polyolefins (Lakshmanan, col. 1, ll. 55-62).

ANALYSIS

Rejection under § 103(a) over Zhou in view of Lakshmanan.

Claims 18-22, 24-35, 44-48, and 52-65 in the application stand rejected under 35 U.S.C. § 103(a) as obvious over Zhou in view of Lakshmanan. According to the Examiner, Zhou teaches all the elements of the claimed invention, as found in claim 18, except the addition of an elastomeric base polymer to the hot melt adhesive (Ans. 4). Appellant did not dispute this finding made by the Examiner (*see* App. Br. and Reply Br. in their entirety).

Lakshmanan discloses a hot-melt adhesive composition comprising an amorphous polyolefin, a tackifier and a block copolymer elastomer (FF 4). The Examiner contends that one skilled in the art would find replacing the atactic polyolefin in Zhou with the amorphous polyalphaolefin/block

copolymer elastomer/tackifier composition of Lakshmanan to have been obvious (Ans. 4).

We determine that the Examiner has established a *prima facie* case of obviousness in rejecting claim 18 under § 103. A combination of familiar elements found in the prior art combined according to known methods will likely be found obvious when it does no more than yield predictable results. *KSR*, 127 S.Ct. at 1739. The present invention can be viewed as the adhesive composition taught in Zhou, but with its atactic polyolefin replaced with an amorphous (atactic) polyolefin, block copolymer elastomer and tackifier, as taught in Lakshmanan. Based on the disclosure of Lakshmanan (FF 5), a skilled artisan would expect improved adhesion results with the addition of the block copolymer elastomer, together with the tackifier, to the adhesive composition taught in Zhou.

Appellant disputes the Examiner's conclusion of obviousness, contending first that the combination of Zhou with Lakshmanan amounts only to impermissible hindsight and that Zhou provides no teaching, suggestion or motivation for a skilled artisan to add an elastomer to the adhesive composition of Zhou (App. Br. 4). We do not find this argument persuasive because it does not address the reasons relied on by the Examiner in finding motivation to combine the references in the manner claimed. Specifically, the Examiner does not rely on Zhou to provide a teaching, suggestion or motivation to add an elastomer. Rather, the Examiner contends that Lakshmanan motivates a skilled artisan to add a selectively hydrogenated block copolymer to an amorphous polyolefin adhesive in order to improve its adhesion to polyolefin substrates (Ans. 5).

Appellant argues that Lakshmanan requires addition of a tackifier along with a block copolymer elastomer to an amorphous, atactic polyolefin. (App. Br. 6; Reply Br. 3). Appellant further maintains that Zhou discourages the use of more than two components in the adhesive composition (App. Br. 5.) Appellant thus contends that “the two references are contradictory and irreconcilable, and provide no suggestion or motivation to combine the teachings thereof to make the claimed composition” (App. Br. 6-7). We are not persuaded by Appellant’s argument since, as conceded by Appellant (App. Br. 5), Zhou clearly states that optional components, including tackifiers, may be added to the disclosed adhesive composition (FF 3).

Appellant further argues that his invention of a laminate structure with a three-component adhesive (atactic polymer, isotactic polymer and elastomeric base polymer) attains unexpected results in static and dynamic peel strength, and that this improvement is obtained without the use of a tackifier, contrary to the teaching of Lakshmanan (App. Br. 6) which identifies a tackifier as an essential ingredient of the disclosed adhesive compositions (App. Br. 5 (citing Lakshmanan, col. 4, ll. 30-32)). Appellant contends that the claims should be found allowable in view of the improvements achieved in his invention without a tackifier. (App. Br. 6)

We are not persuaded by Appellant’s arguments or evidence of unexpected results (*see* Reply Br. 3-4) because they are not commensurate in scope with the claims. Claim 18 is phrased as “a laminate[d] structure, *comprising* … [a] stretchable adhesive composition *including* … an atactic polymer, … an isotactic polymer … and … an elastomeric base polymer” (emphasis added). Transitional words such as *comprises*, and its synonym,

includes, are open-ended, and do not limit the claim to only those ingredients listed, but rather permit the use of other, unnamed ingredients. *Mars, Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376 (Fed. Cir. 2004). As such, we interpret claim 18 as open to the inclusion of additional unnamed layers/elements in the laminated structure as well as the inclusion of additional components, such as tackifiers, in the adhesive composition. Throughout his Brief, Appellant stressed there was no teaching, suggestion or motivation to combine the disclosures in Zhou and Lakshmanan. In this regard, Appellant subsequently contends that, under *KSR*, the proper analysis of obviousness is “whether there was an apparent reason to combine the known elements in the fashion claimed by [Applicant]” (Reply Br. 2 (quoting *KSR*, 127 S.Ct. at 1741)). According to Appellant, “a person skilled in the art would have seen no benefit in combining the teachings of Zhou et al. and Lakshmanan et al. and would not have created Applicant’s claimed laminate.” (Reply Br. 2.) We disagree. As explained by the Examiner, Lakshmanan teaches that adding block copolymer elastomers to polyolefin adhesives improves adhesion to polyolefin substrates. (Ans. 6, *see* FF 5). Appellant has not provided arguments or evidence to refute the Examiner’s finding that one of ordinary skill in the art would have expected an improvement in adhesion. Under the analysis of *KSR*, we determine that the Examiner has provided a sufficient reason to combine the disclosures of Zhou and Lakshmanan.

CONCLUSION

In summary, we sustain the rejection of pending claims 18-22, 24-35, 44-48, and 52-65 under § 103(a) as obvious over Zhou in view of Lakshmanan.

Appeal 2008-1542
Application 10/655,717

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

Appeal 2008-1542
Application 10/655,717

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